

June 2015 Regional Climate Summary

For the San Francisco Bay Area and Monterey Bay Area

The first ten days of June 2015 included thunderstorms, a brief heat event, and some gusty winds. Very little weather of significance occurred during the final two-thirds of the month. Overall, the month was slightly warmer than normal. June rainfall totals ran the gamut from well below normal to significantly above normal – an expected outcome during a typically dry month in which most precipitation was convective in nature.

An upper level low pressure trough gradually deepened along the west coast during the first five days of June. Local light rain and drizzle occurred on the morning of June 1, but it took until the early morning hours of Thursday June 4th before showers and thunderstorms developed. Isolated showers and thunderstorms continued into June 5. Precipitation during the first five days of June was mostly light and fell primarily over the North Bay and also across southern San Benito County and southeastern Monterey County.



Thunderstorm over Southern San Benito County late on the afternoon of June 5. This photo was taken from the roof of the National Weather Service Office in Monterey, more than 50 miles to the west-northwest of the thunderstorm location.

A strong upper level high pressure ridge developed over the Pacific Northwest and northern California by Monday, June 8. On June 8 several locations reached 100 degrees, but only one daily high temperature record was set (109 in Gilroy).

100 Degree Heat on Monday, June 8

Several locations reported afternoon high temperatures at or above the century mark on Monday, including...



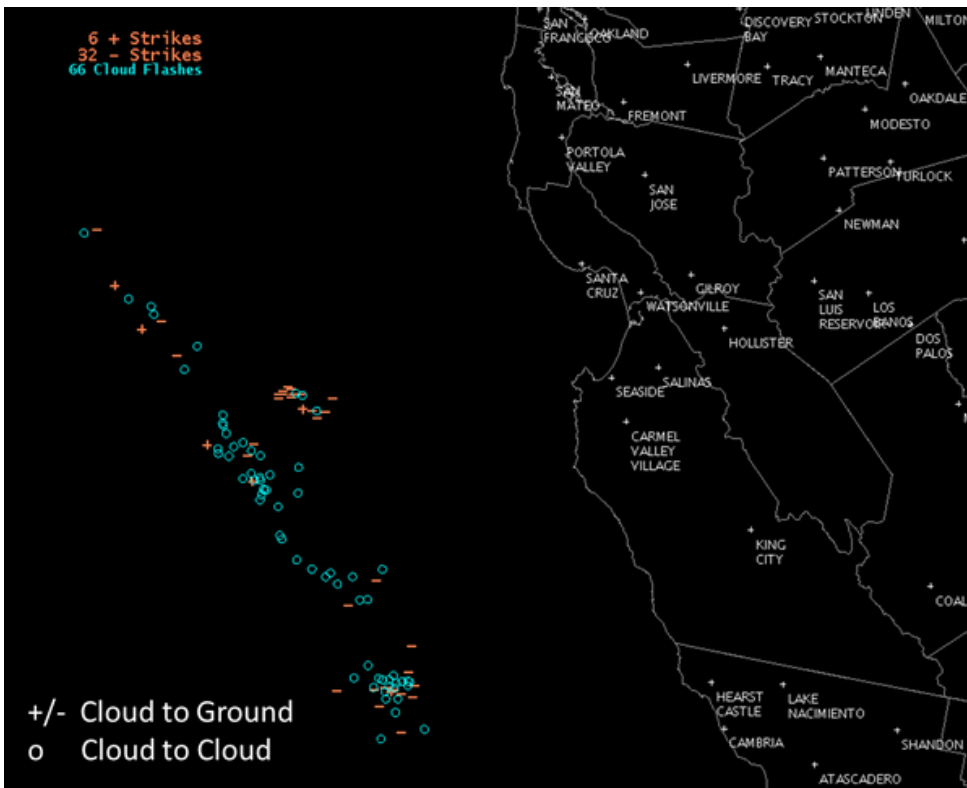
| | |
|---------------------|-----|
| • Kentfield | 100 |
| • Napa | 101 |
| • Redwood City | 100 |
| • Concord | 100 |
| • Concord Airport | 104 |
| • Livermore | 103 |
| • Livermore Airport | 106 |
| • Gilroy | 109 |
| • Morgan Hill | 104 |
| • Hollister | 101 |
| • King City | 106 |

However, only one location set a record high temperature on Monday. Gilroy's 109 was seven degrees warmer than the previous record of 102 set on this date in 1973. This was also the warmest temperature in Gilroy so early in the season.

Social media graphic summarizing the heat of June 8.

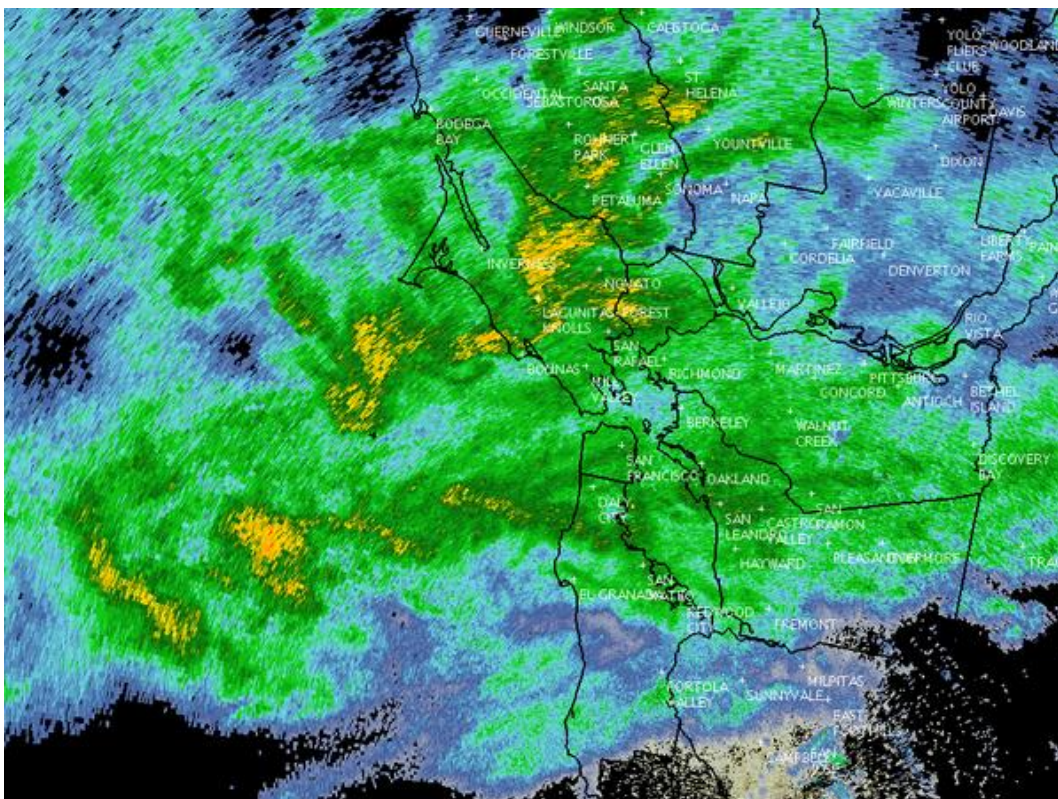
An upper low off the southern California coast began to lift to the north during the early morning hours of Tuesday, June 9. Weather impacts from this low pressure included locally strong winds, much cooler temperatures, and thunderstorms:

- Locally gusty south winds developed early on the morning of June 9. Wind gusts as high as 45 mph were reported in San Francisco around 7 am.
- Gilroy's high temperature plummeted 27 degrees from the 8th to the 9th (109 to 82).
- Thunderstorms initially developed off the southern California during the early morning hours of June 9 when more than 500 lightning strikes were detected between 4-5 am. By mid-morning, thunderstorms were detected off the Central California Coast. Precipitation began to move onshore across southern Monterey County by early that afternoon.



Lightning strikes detected off the Central California coast on the morning of Tuesday, June 9.

As the low continued to track northward that night, showers spread into the San Francisco Bay Area. Widespread shower activity developed across the San Francisco Bay Area by sunrise on the morning of Wednesday, June 10.



Radar image from 6:53 am on the morning of June 10 showing widespread shower activity across the northern and central San Francisco Bay Area, and adjoining coastal waters.

Isolated thunderstorms also developed that same afternoon over southern Monterey and San Benito Counties.

As much as a half inch of rain fell across portions of the East Bay on June 10, and some North Bay locations picked up as much as a quarter inch. Most locations outside of the North and East Bay received less than a quarter of an inch. San Francisco and San Jose both picked up about a tenth of an inch.

The only other precipitation to occur in June was on the 28th when a few sprinkles fell around the San Francisco Bay Area.

The final two-thirds of June were mostly devoid of significant weather. One final heat event arrived at the end of the month. The heat on Tuesday June 30 was mostly confined to inland areas. One daily high temperature record was set that day (Gilroy, 103), and many locations reported their warmest temperature of the month including Livermore (106), Santa Rosa Airport (102), Los Gatos (99) and San Jose (92).

Overall, June 2015 was a slightly warmer-than-normal month. Average temperatures at most locations were a few degrees warmer than normal. However, some inland valley and higher elevation locations posted average monthly temperatures that were as much as five degrees warmer than normal.

June Regional Temperature Summary:

| Location | Average High | Normal High | Departure from Normal | Average Low | Normal Low | Departure from Normal |
|--------------------------------|--------------|-------------|-----------------------|-------------|------------|-----------------------|
| North Bay | | | | | | |
| Calistoga | 87.2 | 85.9 | 1.3 | 52.6 | 50.4 | 2.2 |
| Cloverdale | 93.3 | 87.5 | 5.8 | 55.1 | 55.5 | -0.4 |
| Kentfield | 82.8 | 79.1 | 3.7 | 52.1 | 51.9 | 0.2 |
| Napa | 83.1 | 81.1 | 2.0 | 55.0 | 53.4 | 1.6 |
| Napa Airport | 77.8 | 78.4 | -0.6 | 51.5 | 49.9 | 1.6 |
| Petaluma Airport | 81.7 | 78.6 | 3.1 | 50.8 | 50.6 | 0.2 |
| Saint Helena | 89.0 | 85.2 | 3.8 | 54.6 | 53.4 | 1.2 |
| San Rafael | 80.8 | 75.8 | 5.0 | 54.1 | 53.4 | 0.7 |
| Sonoma County Airport | 83.4 | 81.2 | 2.2 | 50.6 | 50.0 | 0.6 |
| San Francisco Peninsula | | | | | | |
| Half Moon Bay | 65.4 | 63.5 | 1.9 | 53.0 | 49.2 | 3.8 |
| Palo Alto | 78.7 | 78.4 | 0.3 | 54.2 | 52.4 | 1.8 |
| Redwood City | 80.2 | 79.2 | 1.0 | 55.8 | 53.5 | 2.3 |
| San Francisco Airport | 70.8 | 70.6 | 0.2 | 54.8 | 53.8 | 1.0 |
| San Francisco Downtown | 66.5 | 66.4 | 0.1 | 54.0 | 52.8 | 1.2 |

| East Bay | Average High | Normal High | Departure from Normal | Average Low | Normal Low | Departure from Normal |
|---|--------------|-------------|-----------------------|-------------|------------|-----------------------|
| Antioch | 89.7 | 86.1 | 3.6 | 58.9 | 57.9 | 1.0 |
| Concord Airport | 88.0 | 82.6 | 5.4 | 57.9 | 55.9 | 2.0 |
| Fremont | 78.2 | 75.4 | 2.8 | 55.8 | 54.8 | 1.0 |
| Hayward Airport | 74.1 | 71.9 | 2.2 | 56.4 | 55.2 | 1.2 |
| Livermore | 88.7 | 83.3 | 5.4 | 55.8 | 54.2 | 1.6 |
| Livermore Airport | 89.2 | 81.1 | 8.1 | 57.8 | 54.1 | 3.7 |
| Martinez | 87.8 | 85.1 | 2.7 | 52.1 | 50.2 | 1.9 |
| Mount Diablo Junction | 80.5 | 77.6 | 2.9 | 60.5 | 54.3 | 6.2 |
| Oakland | 72.2 | 71.5 | 0.7 | 56.0 | 55.0 | 1.0 |
| Oakland Airport | 71.3 | 70.5 | 0.8 | 55.3 | 53.8 | 1.5 |
| Richmond | 70.4 | 71.5 | -1.1 | 53.9 | 54.7 | -0.8 |
| South Bay and Santa Cruz County | | | | | | |
| Gilroy | 82.2 | 83.8 | -1.6 | 51.2 | 52.5 | -1.3 |
| Los Gatos | 85.2 | 81.1 | 4.1 | 54.1 | 52.4 | 1.7 |
| Moffett Federal Airfield | 76.3 | 76.2 | 0.1 | 57.3 | 56.6 | 0.7 |
| Mount Hamilton | 76.5 | 70.7 | 5.8 | 62.2 | 55.6 | 6.6 |
| San Jose | 79.0 | 79.1 | -0.1 | 56.6 | 56.0 | 0.6 |
| Santa Cruz | 77.0 | 74.7 | 2.3 | 54.3 | 51.8 | 2.5 |
| Watsonville | 70.9 | 71.3 | -0.4 | 55.1 | 51.7 | 3.4 |
| Watsonville Airport | 71.4 | 73.1 | -1.7 | 52.9 | 50.7 | 2.2 |
| Monterey and San Benito Counties | | | | | | |
| Carmel Valley | 78.7 | 76.4 | 2.3 | 49.6 | 48.7 | 0.9 |
| Hollister | 79.1 | 79.1 | 0.0 | 52.9 | 50.9 | 2.0 |
| King City | 85.4 | 83.3 | 2.1 | 52.1 | 50.4 | 1.7 |
| Monterey Airport | 68.0 | 66.7 | 1.3 | 53.9 | 52.0 | 1.9 |
| Pinnacles National Park | 94.5 | 87.9 | 6.6 | 48.1 | 46.8 | 1.3 |
| Salinas Airport | 70.4 | 70.2 | 0.2 | 54.4 | 53.1 | 1.3 |

| Daily High Temperature Records for June 2015 | | | |
|--|----------|-----------------|--------------------------|
| Date | Location | Record Max Temp | Previous Record and Year |
| 6/08 | Gilroy | 109 | 102 in 1973 |
| 6/30 | Gilroy | 103 | 98 in 1999 |

June is typically a dry month in which most climate stations average less than a quarter of an inch of rain. Thus, whenever rain of any significance does fall, rain totals can greatly exceed average rainfall. Such was the case in June 2015 when some East Bay locations picked up more than three times their normal June rainfall. These East Bay sites were Antioch, Concord and Livermore. At the other extreme, five climate stations received no measurable rain during the month of June. These dry locations were Gilroy, Los Gatos, Watsonville, Hollister, and Pinnacles National Park.

June Regional Precipitation Summary:

| Location | June Rainfall | Normal June Rainfall | Percent of Normal |
|--------------------------------|---------------|----------------------|-------------------|
| North Bay | | | |
| Calistoga | 0.11 | 0.22 | 50 |
| Cloverdale | 0.22 | 0.16 | 138 |
| Kentfield | 0.14 | 0.25 | 56 |
| Napa | 0.17 | 0.19 | 89 |
| Napa Airport | 0.13 | 0.19 | 68 |
| Occidental | 0.25 | 0.41 | 61 |
| Petaluma Airport | 0.26 | 0.17 | 153 |
| Saint Helena | 0.04 | 0.16 | 25 |
| San Rafael | 0.17 | 0.14 | 121 |
| Sonoma County Airport | 0.02 | 0.24 | 8 |
| San Francisco Peninsula | | | |
| Half Moon Bay | 0.08 | 0.29 | 28 |
| Palo Alto | 0.15 | 0.09 | 167 |
| Redwood City | 0.10 | 0.10 | 100 |
| San Francisco Airport | 0.26 | 0.11 | 236 |
| San Francisco Downtown | 0.12 | 0.16 | 75 |
| East Bay | | | |
| Antioch | 0.50 | 0.09 | 556 |
| Concord Airport | 0.37 | 0.09 | 411 |
| Fremont | 0.11 | 0.10 | 110 |
| Hayward Airport | 0.14 | 0.20 | 70 |
| Livermore | 0.33 | 0.09 | 367 |
| Livermore Airport | 0.27 | 0.04 | 675 |
| Martinez | 0.19 | 0.13 | 146 |
| Mount Diablo Junction | 0.20 | 0.19 | 105 |
| Oakland | 0.16 | 0.12 | 133 |
| Oakland Airport | 0.18 | 0.18 | 100 |
| Richmond | 0.16 | 0.20 | 80 |

| South Bay & Santa Cruz County | June Rainfall | Normal June Rainfall | Percent of Normal |
|--|----------------------|-----------------------------|--------------------------|
| Ben Lomond | 0.04 | 0.23 | 17 |
| Gilroy | 0.00 | 0.11 | 0 |
| Los Gatos | 0.00 | 0.10 | 0 |
| Moffett Federal Airfield | 0.11 | 0.10 | 110 |
| Mount Hamilton | 0.06 | 0.26 | 23 |
| San Jose | 0.10 | 0.10 | 100 |
| Santa Cruz | 0.01 | 0.19 | 5 |
| Watsonville | 0.00 | 0.11 | 0 |
| Watsonville Airport | 0.01 | 0.12 | 8 |
| Monterey and San Benito Counties | | | |
| Carmel Valley | 0.03 | 0.13 | 23 |
| Hollister | 0.00 | 0.07 | 0 |
| King City | 0.02 | 0.05 | 40 |
| Monterey Airport | 0.01 | 0.10 | 10 |
| Pinnacles National Park | 0.00 | 0.07 | 0 |
| Salinas | 0.15 | 0.09 | 167 |
| Salinas Airport | 0.15 | 0.09 | 167 |

June 30 marked the official end of the 2014-15 rain year. The 2014-15 rain year was the fourth consecutive drier-than-normal year, resulting in exceptional drought conditions across most of the region. Precipitation totals for the 2014-2015 rain year were mostly between 60 and 90 percent of normal. A complete summary of the 2014-15 rain year will be issued as a separate document.

Miscellaneous June Climate Information

| Monthly Ranks for Downtown San Francisco | | |
|---|----------|--|
| Average High Temperature | 66.5 deg | 50 th warmest June out of 141 years |
| Average Low Temperature | 54.0 deg | 23 rd warmest June out of 141 years |
| Average Mean Temperature | 60.3 deg | 38 th warmest June out of 141 years |
| Precipitation | 0.12 in | 45 th wettest June out of 166 years |

| Monthly Extremes for Select Locations | | | |
|---------------------------------------|-----------------------------|-----------------------------|----------------------------------|
| Location | Max Temp: Warmest Day(s) | Min Temp: Coolest Day(s) | Precipitation: Wettest Day(s) |
| Sonoma County Airport | 6/30 | 6/19 | 6/01, 6/10 |
| | 102 degrees | 45 degrees | 0.01 inches |
| San Francisco | 6/08 | 6/19 | 6/10 |
| | 78 degrees | 51 degrees | 0.11 inches |
| Livermore Airport | 6/30 | 6/16, 6/19, 6/22 | 6/10 |
| | 108 degrees | 53 degrees | 0.27 inches |
| San Jose | 6/30 | 6/19 | 6/10 |
| | 92 degrees | 52 degrees | 0.10 inches |
| Salinas Airport | 6/08 | 6/20 | 6/03 |
| | 86 degrees | 50 degrees | 0.15 inches |

Note: This climatological data is preliminary. For official certified climatological data please contact the National Climatic Data Center at 828-271-4800 or <http://www.ncdc.noaa.gov>. Official values as determined at the above web site may take several months for authentication and publication.